1.6.7 Embodied Energy of Floor Structures in the U.S.

Floor Structure with Interior Ceiling Finish of Gypsum Board, Latex Paint

	Embodied Energy (MMBtu/SF) (1)	CO2 Equivalent Emissions (lbs/SF)
Concrete flat plate and slab column system 25% flyash	0.15	31.98
Precast double-T concrete system	0.08	17.73
Glulam joist and plank decking	0.07	6.41
Wood chord and steel web truss system	0.06	6.49
Wood I-joist and OSB decking system	0.05	3.72
Open web steel joist with steel decking system and concrete topping	0.09	12.67
Wood truss and OSB decking system	0.06	4.35
Open web steel joist with 3/4" OSB flooring system	0.06	5.01

Floor Structure without Interior Ceiling Finish

Concrete flat plate and slab column system 25% flyash	0.14	30.94
Concrete hollow core slab	0.06	14.14
Open web steel joist with 3/4" OSB flooring system	0.05	3.96

Note(s): Assumptions: Values are general estimations for the U.S. 60 year building lifetime. Low rise building. 1) Embodied Energy: Energy use includes extraction, processing, transportation, construction, and disposal of each material. 2) Resource Use: The weight of raw materials used in extraction, processing, transportation, construction and disposal of each material.

Source(s): Athena Institute, Athena EcoCalculator for Assemblies v.2.3. 2007, Available at www.athenasmi.org/tools/ecoCalculator/index.html